

US EPA RECORDS CENTER REGION 5



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Monthly Oversight Report 13
ACS NPL Site
Griffith, Indiana
December 29, 2001 - February 1, 2002



BLACK & VEATCH

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Black & Veatch Special Projects Corp.

USEPA/RAC VII
American Chemical Services RAO (057-ROBF-05J7)

BVSPC Project 46526
BVSPC File C.3
February 12, 2002

Mr. Kevin Adler
U.S. Environmental Protection Agency
77 W. Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3590

Subject: Monthly Oversight Summary Report
No. 13 for January 2002

Dear Mr. Adler:

Enclosed is the Monthly Oversight Summary Report No. 13 for January 2002 for the American Chemical Services Superfund Site in Griffith, Indiana.

If you have any questions, please call (312-683-7856) or email (campbellm@bv.com).

Sincerely,

BLACK & VEATCH Special Projects Corp.

Larry M. Campbell, P.E.
Site Manager

Enclosure

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Monthly Oversight Summary Report No. 13
ACS Superfund Site WA57, 46526.238

Reporting Period: Month of January (December 29, 2001 - February 1, 2002)

BVSPC O/S Dates: January 10, 24, and 30, 2002

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	5	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Austgen	3	Electrical Contractor
Area Survey	2	Surveying Contractor
Ryan Construction	2	General Contractor
Midwest Environmental, Inc.	2	Contractor

Construction Activities

Major Activities:

- Midwest Environmental, Inc. installed a man ring at the railroad tracks in order to repair a damaged fiber optic cable.
- Austgen replaced a damaged fiber optic conduit and cable connecting the groundwater treatment plant and the Off-Site Containment Area blower shed.
- Montgomery Watson Harza replaced the granular activated carbon in the groundwater treatment plant.
- Ryan Construction connected the piping for the in-situ soil vapor extraction system in the Off-Site Containment Area.
- Area Survey completed a survey of the Off-Site Containment Area in-situ soil vapor extraction system.
- Montgomery Watson Harza tested the Off-Site Containment Area in-situ soil vapor extraction system blower.
- Montgomery Watson Harza held weekly construction coordination meetings at the site on January 10 and 24, 2001, and canceled the weekly construction coordination meetings on January 3 and 17, 2001, because of construction inactivity at the site. Montgomery

Watson Harza held the January 31, 2002, construction coordination meeting via conference call because of the inclement weather.

Activities Performed:

Montgomery Watson Harza (MWH) reported that Midwest Environmental, Inc. excavated and installed a man ring adjacent to the railroad tracks that separate the On-Site Containment Area (ONCA) and the Off-Site Containment Area (OFCA) in order to uncover the conduit containing a damaged fiber optic cable. Austgen removed the damaged fiber optic cable from the conduit. When Austgen attempted to reinstall the cable, it damaged the existing conduit at the elbow near the OFCA blower shed. Austgen replaced the damaged conduit with a stainless steel conduit located in the OFCA clay cover and then installed a new fiber optic cable.

Area Survey surveyed the OFCA in-situ soil vapor extraction (ISVE) system on January 17, 2002, in order to complete the As-Built survey.

Black & Veatch Special Projects Corp. (BVSPC) observed Ryan Construction (Ryan) connect the OFCA ISVE well piping to the manifold in the blower shed with clear flex piping. MWH reported that it performed air monitoring of the ISVE wells in the blower shed prior to Ryan beginning installation activities. MWH reported that it observed an odor from the wells; however, the photoionization detector readings were 0 ppm. Ryan also installed valves, flow meters, and other piping to complete the connections in the OFCA blower shed. MWH performed a clean air test on the blower and operated the blower for 1 hour at its rated load. MWH will perform a clean air test on the OFCA ISVE wells in early February and anticipates to manually start the ISVE system on February 18, 2002.

The thermal oxidizer and scrubber were delivered to the site on January 31, 2002. Ryan will install the system at the groundwater treatment plant (GWTP). Once the installation is complete, representatives from Durr Environmental, Inc. (Durr) will test the system. Austgen continued to work on the control logic for the OFCA ISVE system.

MWH reported that Koester Environmental Services (KES) was scheduled to repair swale 3 near the northwest portion of the OFCA. KES did not complete the work during this reporting period because of the weather conditions.

MWH reported that it is compiling information regarding the dewatered groundwater levels in the OFCA and the ONCA. MWH reported that approximately 50% of the dewatering volume determined in the final design remedy has been removed from the OFCA and approximately 25% of the dewatering volume has been removed from the ONCA. MWH reported that it has observed an 8-10% decrease in the water table elevation in the still bottoms pond area and the OFCA area. MWH reported that it has observed a minimal drop in the water table elevation in the Kapica-Pazmey area.

MWH replaced the granular activated carbon (GAC) in the GWTP on January 7, 2002. MWH operated the GWTP in recirculation mode in order to reduce the concentration of metals in the effluent that are released by the replacement GAC. MWH reported that the treatment efficiency of the Activated Sludge

Tank has decreased because of the colder weather. In order to increase the efficiency of the sludge tank, MWH seeded the tank with cold water bio-mass. MWH reported that it observed some increase in efficiency; however, it has scheduled another GAC replacement for February 4, 2002.

Attached are BVSPC weekly reports No. 44 through 48, correspondence, log book notes, and photographs of the daily activities. BVSPC's crew conducted oversight of the major field activities on January 10, 24, and 30, 2002. BVSPC's crew attended two weekly construction coordination meetings at the site on January 10 and 24, 2002. BVSPC participated in the weekly construction coordination meeting on January 31, 2002, via conference call. MWH did not hold construction coordination meetings on January 3 and 17, 2002, because of construction inactivity at the site.

Topics of Concern:

- MWH was unable to obtain a groundwater elevation at monitoring well MW-18 due to debris in the well. MW-18 is part of the long term monitoring program.
- The residential well located at 1007 Reder Road could not be sampled because the pump was not operating. This well is part of the long term monitoring program.

Concern Resolution:

- MWH proposed to replace MW-18 with MW-17 in the *Revised Long-Term Groundwater Monitoring Plan*. MWH will abandon MW-18 in accordance with the Indiana Administrative Code.

Upcoming Activities:

- MWH to clean air test the OFCA ISVE wells.
- Ryan Construction to begin installation activities for the thermal oxidizer and scrubber in the GWTP.
- MWH to replace the GAC in the GWTP.
- KES to repair swale 3 located near Colfax Ave.
- Durr to test the thermal oxidizer and scrubber during the week of February 11, 2002.
- Austgen to complete the control logic for the OFCA ISVE system.
- MWH to startup the OFCA ISVE system February 18, 2002.

Signature: Leigh Peters

Date: February 6, 2002

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Weekly Oversight Summary Report No. 44
ACS Superfund Site WA57, 46526.238

Reporting Period: Week of December 31, 2001

BVSPC O/S Dates: Canceled because of limited site activities

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	1	Respondent's General Contractor
Black & Veatch Special Projects Corp.	0	USEPA Oversight Contractor
Midwest Environmental, Inc.	2	Fiber Optic Cable Repair Contractor
Austgen	1	Electrical Contractor

Construction Activities

Major Activities:

- Midwest Environmental, Inc. installed a man ring at the railroad tracks in order to repair the damaged fiber optic cable.
- Austgen removed the damaged fiber optic cable at the man ring.
- Montgomery Watson Harza canceled the weekly construction coordination meeting because of construction inactivity at the site.

Activities Performed:

Montgomery Watson Harza (MWH) reported that Midwest Environmental, Inc. excavated and installed a man ring adjacent to the railroad tracks that separate the On-Site Containment Area and the Off-Site Containment Area (OFCA) in order to uncover the conduit containing the damaged fiber optic cable. MWH reported that Austgen removed the damaged fiber optic cable from the conduit and will replace the cable next week.

MWH reported that Ryan Construction will connect the OFCA in-situ soil vapor extraction (ISVE) wells to the blower shed next week and will install piping for the oxidizer at the groundwater treatment plant (GWTP).

MWH canceled the weekly construction coordination meeting because of construction inactivity at the site.

Topics of Concern:

- MWH was unable to obtain a groundwater elevation at monitoring well MW-18 due to debris in the well. MW-18 is part of the long term monitoring program.

- The residential well located at 1007 Reder Road could not be sampled because the pump was not operating. This well is part of the long term monitoring program.

Concern Resolution:

- MWH proposed to replace MW-18 with MW-17 in the *Revised Long-Term Groundwater Monitoring Plan*. MWH will abandon MW-18 in accordance with the Indiana Administrative Code.

Upcoming Activities:

- Austgen to reinstall the fiber optic cable from the OFCA blower shed to the GWTP.
- Ryan Construction to install piping in the OFCA blower shed and the GWTP.

Signature: Leigh Peters

Date: January 11, 2002

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Weekly Oversight Summary Report No. 45
ACS Superfund Site WA57, 46526.238

Reporting Period: Week of January 7, 2002

BVSPC O/S Dates: January 10, 2002 (Ms. Peters)

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	4	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Ryan Construction	2	General Construction Contractor
Austgen	3	Electrical Contractor

Construction Activities

Major Activities:

- Ryan Construction connected piping for the in-situ soil vapor extraction system in the Off-Site Containment Area blower shed.
- Austgen installed a steel electrical conduit in the Off-Site Containment Area and replaced the damaged fiber optic cable.
- Montgomery Watson Harza replaced the granular activated carbon in the groundwater treatment plant.
- Montgomery Watson Harza held the weekly construction coordination meeting.

Activities Performed:

Black & Veatch Special Projects Corp. observed Ryan Construction (Ryan) install the clear flex pipe that connects the Off-Site Containment Area (OFCA) in-situ soil vapor extraction (ISVE) system piping to the manifold in the blower shed. Montgomery Watson Harza (MWH) reported that it performed air monitoring of the ISVE wells in the blower shed with a photoionization detector (PID) prior to Ryan beginning installation activities. MWH also reported that it observed an odor from the wells; however, the PID readings were 0 ppm. Ryan also installed valves and piping to complete the connections in the OFCA blower shed.

The thermal oxidizer and scrubber are scheduled to be delivered to the site during the week of January 28, 2002. MWH is scheduled to be at the manufacturer's plant in Detroit, Michigan during the week of January 28, 2002, in order to test the thermal oxidizer and scrubber prior to installation on-site. Ryan will be assisting MWH in the installation of the thermal oxidizer, scrubber, and associated piping in the groundwater treatment plant (GWTP).

Austgen attempted to install a replacement fiber optic cable from the GWTP to the OFCA blower shed in the existing conduit. During installation activities, Austgen damaged the existing conduit at the elbow near the OFCA blower shed. Austgen replaced the entire length of conduit in the OFCA with a stainless steel conduit. The stainless steel conduit was installed in the clay cover, approximately 3 inches below the top of the clay. Austgen installed the stainless steel conduit from the OFCA blower shed to the man ring located near the railroad tracks between the OFCA and the On-Site Containment Area (ONCA). After the conduit was replaced, Austgen installed the fiber optic cable. Austgen is preparing the control logic for the OFCA ISVE system. MWH will be testing the OFCA ISVE piping connections prior to start-up.

MWH reported that Koester Environmental Services (KES) is scheduled to repair swale 3 near the northeast portion of the OFCA. The swale was damaged during repair activities at extraction well EW-20C.

MWH replaced the granular activated carbon (GAC) in the GWTP on January 7, 2002. MWH operated the GWTP in recirculation mode in order to reduce the concentration of metals in the effluent that are released by the replacement GAC. MWH resumed normal operation of the GWTP on January 10, 2002. MWH recently changed the GAC at the end of November 2001. MWH attributes the early replacement of the GAC to the following: the cold weather has reduced the efficiency of the Activated Sludge Tank; and the replacement GAC received in November 2001 was of poor quality. MWH ordered cold water biomass for the Activated Sludge Tank in order to increase the efficiency of the bio tank and installed it on January 10, 2002. MWH reported that it continues to pump from the OFCA and ONCA extraction wells.

MWH held the weekly construction coordination meeting at the site on January 10, 2002.

Topics of Concern:

- MWH was unable to obtain a groundwater elevation at monitoring well MW-18 due to debris in the well. MW-18 is part of the long term monitoring program.
- The residential well located at 1007 Reder Road could not be sampled because the pump was not operating. This well is part of the long term monitoring program.

Concern Resolution:

- MWH proposed to replace MW-18 with MW-17 in the *Revised Long-Term Groundwater Monitoring Plan*. MWH will abandon MW-18 in accordance with the Indiana Administrative Code.

Upcoming Activities:

- MWH to test OFCA ISVE system.
- Ryan to begin installation activities for the oxidizer in the GWTP.
- KES to repair swale 3 located near Colfax Ave.
- Area Survey to survey OFCA ISVE system.
- Austgen to prepare OFCA ISVE system control logic.
- Thermal oxidizer and scrubber to be delivered during the week of January 28, 2002.

Signature: Leigh Peters

Date: January 14, 2002

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TWO TO FOUR WEEK "LOOK AHEAD SCHEDULE"
JANUARY 8, 2002
AMERICAN CHEMICAL SERVICE, NPL SITE
GRIFFITH, INDIANA

Since the last construction meeting held at the ACS Site was December 20, 2001, this memo is being distributed to provide information on activities scheduled to occur in the next two to four weeks.

- **Off-Site Area In-Situ Vapor Extraction (ISVE) System** – Ryan Construction is in the process of installing additional piping and wiring in the blower shed. They are scheduled to be finished by the end of January 2002. Austgen Electric will be conducting additional testing on the ISVE system pipes during January 2002. Each ISVE well will be opened to the atmosphere and fresh air will be pulled through the line into the blower shed. Pressure testing was already conducted on each line during the conveyance piping installation, however this test will confirm that the blower unit is functioning as designed. In addition, Austgen will send atmospheric air from the blower shed to the Groundwater Treatment Plant to confirm that the complete piping network is prepared for the start-up of the ISVE unit.
- **Groundwater Treatment Plant (GWTP)** – The thermal oxidation unit, a key component of the ISVE system, is scheduled to be delivered to the site and installed during the week of January 28, 2002 by Durr Engineering. After installation of the thermal oxidizer, Ryan Construction will install vapor and condensate conveyance piping which will connect the thermal oxidizer to the GWTP influent header system. Ryan's work will be completed by mid-February 2002, depending upon the delivery schedule of the thermal oxidizer.

Cold water bugs will be added to the Activated Sludge Tank during January 2002 to increase the efficiency of the biological treatment processes during the winter months. The carbon units will be changed out as part of regular maintenance during the week of January 7, 2002.

- **Off-Site Area Temporary Cap** – Koester Environmental Services (KES) is scheduled to be on site during the week of January 14, 2002 to place additional geotextile fabric in a portion of the drainage swale in the Off-Site Area along Colfax Ave. and replace the rip rap in the swale. This portion of the swale was damaged during the reinstallation of extraction well EW-20C by Contract Dewatering Services (CDS) in October and November 2002.
- **Next Meeting** – The next construction meeting is scheduled for Thursday, January 10, 2002 in the Site Trailer.

TMK/PJV/TAL/RAA
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**WEEKLY CONSTRUCTION MEETING MINUTES
FOR JANUARY 10, 2002 MEETING
AMERICAL CHEMICAL SERVICES NPL SITE**

MEETING DATE: January 10, 2002

MEETING TIME: 10:00 AM

MEETING LOCATION: ACS Site – Site Trailer

TOPICS:

Health and Safety (Tom Tinics)

- Summary

Off-Site Area In-Situ Vapor Extraction System (ISVE) (Tom Tinics)

- Ryan Construction is in the process of installing additional piping and wiring in the blower shed.
- Austgen Electric will be conducting additional testing on the ISVE system pipes prior to system startup.
- Area Survey is scheduled to survey the as-built locations of the Off-Site Area ISVE wells January 17, 2002.

Groundwater Treatment Plant (GWTP) (Lee Orosz)

- Status
- The thermal oxidation unit, a key component of the ISVE system, is scheduled to be delivered to the site and installed during the week of January 28, 2002 by Durr Engineering.
- After installation of the thermal oxidizer, Ryan Construction will install vapor and condensate conveyance piping which will connect the thermal oxidizer to the GWTP influent header system.
- Cold water bugs will be added to the Activated Sludge Tank during January 2002 to increase the efficiency of the biological treatment processes during the winter months.
- The carbon units were changed out as part of regular maintenance during the week of January 7, 2002.

Off-Site Area Temporary Engineered Cover (Tom Tinics)

- Koester Environmental Services (KES) is scheduled to be on site during the week of January 14, 2002 to place additional geotextile fabric in a portion of the drainage swale in the Off-Site Area along Colfax Ave. and replace the rip rap in the swale.

The Next Weekly Construction Meeting

- The date of the next weekly construction meeting is to be determined.

TMK/



MONTGOMERY WATSON

By TMK Date 1/10/02 Client ACS Sheet 1 of 1
Chkd. By _____ Description Weekly Construction Mtg. Job No. _____

• Attendance

1. Travis Klingforth - MWH
2. Kevin Adler - EPA (via phone)
3. Pete Vagt - MWH (via phone)
4. Leigh Peters BVSPC
5. Chris Daly MWH
6. Tom Tynes
7. Shawn Grady (via phone)
8. Lee Orosz

**WEEKLY CONSTRUCTION MEETING MINUTES
FOR JANUARY 10, 2002 MEETING
AMERICAL CHEMICAL SERVICES NPL SITE**

MEETING DATE: January 10, 2002

MEETING TIME: 10:00 AM

MEETING LOCATION: ACS Site – Site Trailer

ATTENDEES:

Chris Daly – MWH
Travis Klingforth – MWH
Todd Lewis – MWH (via phone)
Lee Orosz – MWH
Tom Tinics – MWH
Peter Vagt – MWH (via phone)
Kevin Adler – U.S. EPA (via phone)
Sean Grady – IDEM (via phone)
Leigh Peters – BVSPC

TOPICS:

Health and Safety

No health and safety issues have occurred on the site since the last weekly construction meeting.

Off-Site Area In-Situ Vapor Extraction System (ISVE) (Tom Tinics)

Ryan Construction is currently installing additional piping and wiring in the blower shed, including flexible tubing to connect the blower unit manifold and the ISVE yard piping as the piping enters the shed. They are also installing vacuum relief valves, fresh air intake piping, and piping between the blower unit and the knockout tank. They are scheduled to be finished by January 11, 2002.

Austgen Electric is currently installing new rigid steel conduit from the Off-Site Area blower shed to the railroad tracks that bisect the site, approximately halfway to the GWTP. This conduit, placed at a depth of four inches below ground surface, will connect to the pullbox that Midwest Environmental, Inc. (MEI) installed on January 2, 2002. MEI installed the pullbox after locating, excavating, and extracting a broken portion of the HDPE conduit running between the blower shed and GWTP. Austgen is currently pulling fiber optic cable through the rigid conduit for the ISVE control system. They will then install the electrical controls for the system.

Additional testing on the ISVE system will be done during January 2002. The blower unit will be energized and checked for proper suction. Each ISVE well will be opened to

the atmosphere and fresh air will be pulled through the line into the blower shed. (Pressure testing was already conducted on each line during the conveyance piping installation.) This test will confirm that the blower unit is functioning as designed. In addition, atmospheric air will be pushed from the blower shed to the Groundwater Treatment Plant to confirm that the complete piping network is prepared for the start-up of the ISVE unit.

Area Survey is scheduled to survey the as-built locations of the Off-Site Area ISVE wells January 17, 2002.

Groundwater Treatment Plant (GWTP)

The GWTP is currently receiving influent from the PGCS and On-Site and Off-Site Area extraction wells. The carbon units were changed out as part of regular maintenance during the week of January 7, 2002. The carbon units, last changed out in November 2001, may have been used up at a faster rate than in the past due to a higher influent rate to the GWTP from the Off-Site Area and a decreased biological treatment efficiency due to cold weather. Normal GWTP discharge to the wetlands, which was paused during the carbon changeout on January 7, 2002, resumed on January 10, 2002.

The thermal oxidation unit, a key component of the ISVE system, is scheduled to be delivered to the site and installed during the week of January 28, 2002 by Durr Engineering. Prior to delivery, MWH is scheduled to participate in a shop test of the unit in the Detroit, Michigan Durr factory.

Cold water bugs are scheduled to be added to the Activated Sludge Tank the week of January 7, 2002 to increase the efficiency of the biological treatment processes during the winter months.

Off-Site Area Temporary Engineered Cover

Koester Environmental Services (KES) is scheduled to be on site during the week of January 14, 2002 to place additional geotextile fabric in a 75 feet long portion of the drainage swale in the Off-Site Area along Colfax Ave. and replace the rip rap in the swale.

The Next Weekly Construction Meeting

The next weekly construction meeting is scheduled for January 24, 2002.

TMK/PJV/TAL

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Weekly Oversight Summary Report No. 46
ACS Superfund Site WA57, 46526.238

Reporting Period: Week of January 14, 2002

BVSPC O/S Dates: Canceled because of limited site activities.

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	2	Respondent's General Contractor
Black & Veatch Special Projects Corp.	0	USEPA Oversight Contractor
Area Survey	2	Surveying Contractor

Construction Activities

Major Activities:

- Area Survey completed a survey of the Off-Site Containment Area in-situ soil vapor extraction system.
- Montgomery Watson Harza canceled the weekly construction coordination meeting because of construction inactivity at the site.

Activities Performed:

Montgomery Watson Harza (MWH) reported that Koester Environmental Services (KES) is scheduled to be at the site on January 24, 2002, to repair swale 3 near Colfax Ave. MWH also reported that it plans to test the Off-Site Containment Area (OFCA) in-situ soil vapor extraction (ISVE) wells, piping, and control systems with Austgen next week. MWH reported that Area Survey surveyed the OFCA ISVE system on January 17, 2002, in order to complete the As-Built survey.

MWH canceled the weekly construction coordination meeting because of construction inactivity at the site.

Topics of Concern:

- MWH was unable to obtain a groundwater elevation at monitoring well MW-18 due to debris in the well. MW-18 is part of the long term monitoring program.
- The residential well located at 1007 Reder Road could not be sampled because the pump was not operating. This well is part of the long term monitoring program.

Concern Resolution:

- MWH proposed to replace MW-18 with MW-17 in the *Revised Long-Term Groundwater Monitoring Plan*. MWH will abandon MW-18 in accordance with the Indiana Administrative Code.

Upcoming Activities:

- MWH to test OFCA ISVE system.
- Ryan to begin installation activities for the oxidizer in the GWTP.
- KES to repair swale 3 located near Colfax Ave.
- Austgen to prepare OFCA ISVE system control logic.
- Thermal oxidizer and scrubber to be delivered during the week of January 28, 2002.

Signature: Leigh Peters

Date: January 24, 2002

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Weekly Oversight Summary Report No. 47
ACS Superfund Site WA57, 46526.238

Reporting Period: Week of January 21, 2002

BVSPC O/S Dates: January 24, 2002 (Ms. Peters)

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	5	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor

Construction Activities

Major Activities:

- Montgomery Watson Harza tested the Off-Site Containment Area in-situ soil vapor extraction system blower.
- Montgomery Watson Harza held the weekly construction coordination meeting at the site.

Activities Performed:

Montgomery Watson Harza (MWH) tested the blower and its connection to the groundwater treatment plant (GWTP) for the Off-Site Containment Area (OFCA) in-situ soil vapor extraction (ISVE) system. MWH reported that the thermal oxidizer and scrubber are scheduled to be delivered to the site during the week of January 28, 2002. Ryan Construction will install the thermal oxidizer and scrubber. Durr Environmental, Inc. (Durr), the manufacturer of the thermal oxidizer and scrubber, is scheduled to be on-site during the week of February 11, 2002, to test the system. MWH decided not to test the system at Durr's facility in Michigan in order to expedite the delivery of the equipment to the site. MWH scheduled start up of the OFCA ISVE system for February 18, 2002. MWH will be testing the ISVE piping to the individual wells next week by opening the top of the well and pulling in atmospheric air through the piping to the blower shed. The air that is pulled through the lines will be released directly to the atmosphere from the blower shed.

Koester Environmental Services (KES) was scheduled to repair swale 3 in the northwest corner of the OFCA near Colfax Ave. on January 24, 2002; however, KES postponed repair activities because of the weather.

MWH continued to pump from On-Site Containment Area extraction wells and OFCA extraction wells. MWH reported that it was operating the GWTP at 25 to 30 gpm. MWH has reduced the pumping rate because of the decreased efficiency of the Activated Sludge Tank. MWH seeded the tank with cold water bio-mass and is evaluating adding a heat exchanger or insulating the influent lines in order to increase the temperature of the water in the tank.

MWH held the weekly construction coordination meeting at the site on January 24, 2002.

Topics of Concern:

- MWH was unable to obtain a groundwater elevation at monitoring well MW-18 due to debris in the well. MW-18 is part of the long term monitoring program.
- The residential well located at 1007 Reder Road could not be sampled because the pump was not operating. This well is part of the long term monitoring program.

Concern Resolution:

- MWH proposed to replace MW-18 with MW-17 in the *Revised Long-Term Groundwater Monitoring Plan*. MWH will abandon MW-18 in accordance with the Indiana Administrative Code.

Upcoming Activities:

- MWH to test the OFCA ISVE system connections.
- Thermal oxidizer and scrubber to be delivered during the week of January 28, 2002.
- Ryan Construction to begin installation activities for the oxidizer in the GWTP.
- Durr to test the thermal oxidizer and scrubber during the week of February 11, 2002.
- KES to repair swale 3 located near Colfax Ave.
- Austgen to prepare OFCA ISVE system control logic.

Signature: Leigh Peters

Date: January 30, 2002

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**WEEKLY CONSTRUCTION MEETING AGENDA
FOR JANUARY 24, 2002 MEETING
AMERICAN CHEMICAL SERVICE, NPL SITE
GRIFFITH, INDIANA**

MEETING DATE: January 24, 2002

MEETING TIME: 10:00 AM

MEETING LOCATION: ACS Site – Site Trailer

TOPICS:

Health and Safety Summary (Tom Tinics)

GWTP Status (Lee Orosz)

In-Situ Vapor Extraction (ISVE) System – Off-Site Area (Tom Tinics)

- Installation of fiber optic cable from GWTP to Blower Shed
- Installation of controls at Blower Shed by Austgen
- Anticipated schedule
- Thermal Oxidizer scheduled to arrive week of January 28
- Additional testing on ISVE system to be performed during the week of January 28

Off-Site Area Temporary Engineered Cover (Tom Tinics)

- Installation of additional geotextile and replacement of riprap by Koester

Looking Ahead (Todd Lewis)

Next Weekly Construction Meeting

- Thursday, January 31, 2002

Name	Company	Fax Number
ROB ADAMS	MWH	630-836-8959
Leigh Peters	BVSPC	312-346-4781
CHRIS DALY	MWH	630-836-8959
JODD LEWIS	MWH	630 836 8959
TOM TYNES	MWH	
KEVIN ADLER	USEPA (TELECONFERENCE)	
SEAN GRADY	IDEM (TELECONFERENCE)	

**WEEKLY CONSTRUCTION MEETING AGENDA
FOR JANUARY 24, 2002 MEETING
AMERICAN CHEMICAL SERVICE, NPL SITE
GRIFFITH, INDIANA**

MEETING DATE: January 24, 2002

MEETING TIME: 10:00 AM

MEETING LOCATION: ACS Site -- Site Trailer

ATTENDEES: Todd Lewis -- MWH
Tom Tinics - MWH
Rob Adams -- MWH
Chris Daly -- MWH
Leigh Peters -- BVSPC
Kevin Adler -- U.S. EPA (via phone)
Sean Grady -- IDEM (via phone)

TOPICS:

Health and Safety Summary

No health and safety incidences have occurred since the last meeting, January 10, 2002. MWH has surveyed the plant and installed "bump protection" on exposed unistruts throughout the plant.

GWTP Status

At the time of the previous meeting, January 10, 2002, MWH had performed a carbon changeout and the plant was in recycling mode. The plant is now back on line. The GWTP currently is receiving influent water from three Off-Site BWES Wells (EW-12, EW-19, and EW-15) and On-Site BWES wells (EW-10, EW-17, and EW-18) and the Perimeter Groundwater Containment System (PGCS). Total flow through the GWTP is approximately 25-30 gpm.

In-Situ Vapor Extraction (ISVE) System -- Off-Site Area

A short fresh-air test of the blower was performed. The blower air was sent through the conveyance piping to the GWTP to clear the lines of any debris. Austgen Electric has successfully installed the fiber optic cable from the GWTP to the Blower Shed and is currently constructing the control panel and PLC off site.

An extended test of the blower is scheduled for the week of January 28, 2002. This will include drawing fresh air through the conveyance lines from each ISVE well. The thermal oxidizer is scheduled for delivery to the site on January 30, 2002. Off-loading of the unit should occur by February 1, 2002. Ryan Construction will then

install/assemble the oxidizer and associated scrubber by February 8, 2002. Startup of the ISVE system should occur during the week of February 11, 2002.

Off-Site Area Temporary Engineered Cover

Austgen, as subcontractor to Koester Environmental Services, will be on site on January 24, 2002 to repair Swale 1, located in the northeast corner of the Off-Site Area, if conditions allow. Austgen will be repairing geotextile material and riprap disturbed during the EW-20C repair work performed by CDS.

Looking Ahead

Week of January 28

- Clean-air Monitoring Test of ISVE system
- Thermal Oxidizer delivery
- Further survey/study of dewatering progress in Off-Site Area

Week of February 4

- Thermal Oxidizer installation/assembly

Week of February 11

- ISVE system start up

to Week of February 28

Next Weekly Construction Meeting

Thursday, January 31, 2002

CAD/TMK/RAA/PJV

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Weekly Oversight Summary Report No. 48
ACS Superfund Site WA57, 46526.238

Reporting Period: Week of January 28, 2002

BVSPC O/S Dates: January 30, 2002 (Ms. Peters)

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	3	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Ryan Construction	1	General Contractor

Construction Activities

Major Activities:

- Montgomery Watson Harza tested the Off-Site Containment Area in-situ soil vapor extraction system blower at its rated load.
- Montgomery Watson Harza held the weekly construction coordination meeting via conference call because of inclement weather.

Activities Performed:

Montgomery Watson Harza (MWH) performed clean air tests on the Off-Site Containment Area (OFCA) in-situ soil vapor extraction (ISVE) system blower. Black & Veatch Special Projects Corp. (BVSPC) observed MWH operate the blower at its rated load of a vacuum of 95 inches of water and a pressure of 23 inches of water. MWH tested the blower at the rated load for one hour. Ryan Construction installed flow meters in the blower shed piping connected to the ISVE wells at the manifold below the flex tubing in the OFCA blower shed. Ryan also installed three flow meters into the HDPE piping connected directly to the ISVE wells. MWH will use these ports to determine whether the flex tubing impacts the flowmeter readings. MWH postponed the testing of the ISVE wells and field calibrating the flow meters to next week because of the inclement weather.

MWH reported that it is compiling information regarding the dewatered groundwater levels in the OFCA and the On-Site Containment Area (ONCA). MWH reported that approximately 50% of the dewatering volume determined in the final design remedy has been removed from the OFCA and approximately 25% of the dewatering volume has been removed from the ONCA. MWH reported that it has observed an 8-10% decrease in the water table elevation in the still bottoms pond area and the OFCA area. MWH reported that it has observed a minimal drop in the water table elevation in the Kapica-Pazmey area.

MWH reported that the thermal oxidizer and scrubber were delivered to the site on January 31, 2002. Ryan Construction will install the thermal oxidizer and scrubber in the groundwater treatment plant (GWTP)

next week. Durr Environmental, Inc. (Durr) is scheduled to be on-site to test the thermal oxidizer and scrubber prior to start up during the week of February 11, 2002. Austgen continued to work on designing the control logic for the OFCA ISVE system and the thermal oxidizer and scrubber system. MWH will test the OFCA ISVE system in manual mode on February 18, 2002.

MWH reported that Koester Environmental Services (KES) was scheduled to repair swale 3 near the northeast portion of the OFCA on Friday, February 1, 2002; however, this has been postponed because of the weather conditions.

MWH reported that the GWTP was operating satisfactorily and MWH has observed some contribution from the cold water bio-mass in the Activated Sludge Tank. MWH continued to investigate insulating the piping to the sludge tank to increase the temperature of the water and treatment efficiency of the tank. MWH scheduled to change the granular activated carbon (GAC) in the GWTP process on Monday, February 4, 2002. MWH recently changed the GAC at the beginning of January 2002. MWH attributed the early replacement of the GAC to the cold weather reducing the efficiency of the Activated Sludge Tank. MWH expects to operate the GWTP in recirculation mode during the beginning of next week and will resume normal operation at the end of next week.

MWH held the weekly construction coordination meeting on January 31, 2002, via conference call because of inclement weather.

Topics of Concern:

- MWH was unable to obtain a groundwater elevation at monitoring well MW-18 due to debris in the well. MW-18 is part of the long term monitoring program.
- The residential well located at 1007 Reder Road could not be sampled because the pump was not operating. This well is part of the long term monitoring program.

Concern Resolution:

- MWH proposed to replace MW-18 with MW-17 in the *Revised Long-Term Groundwater Monitoring Plan*. MWH will abandon MW-18 in accordance with the Indiana Administrative Code.

Upcoming Activities:

- MWH to clean air test the OFCA ISVE wells.
- Ryan Construction to begin installation activities for the oxidizer in the GWTP.
- MWH to replace the GAC in the GWTP.
- Durr to test the thermal oxidizer and scrubber during the week of February 11, 2002.
- Austgen to complete control logic for the OFCA ISVE system.
- KES to repair swale 3 located near Colfax Ave.
- MWH to startup the OFCA ISVE system February 18, 2002.

Signature: Leigh Peters

Date: February 4, 2002

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**WEEKLY CONSTRUCTION MEETING MINUTES
FOR JANUARY 31, 2002 MEETING
AMERICAL CHEMICAL SERVICES NPL SITE**

MEETING DATE: January 31, 2002

MEETING TIME: 10:00 AM

MEETING LOCATION: ACS Site – Site Trailer

ATTENDEES:

Robert Adams – MWH (via phone)
Chris Daly – MWH (via phone)
Travis Klingforth – MWH (via phone)
Lee Orosz – MWH
Tom Tinics – MWH
Peter Vagt – MWH (via phone)
Kevin Adler – U.S.EPA (via phone)
Sean Grady – IDEM (via phone)
Leigh Peters – Black & Veatch (via phone)

TOPICS:

Health and Safety

No health and safety incidents have occurred since the last meeting on January 24, 2002. MWH is in the process of updating the health and safety documentation files stored on site, including certificates of 40-hour HAZWOPER training, 8-hour refresher training, and medical surveillance. Individuals who regularly visit the site should submit a current copy of these records to Lee Orosz, the site health and safety manager, as soon as they become available. MWH has placed a windsock on the Off-Site Area ISVE blower shed for general use in the Off-Site Area.

The thermal oxidizer and scrubber units for use in the operation of the Off-Site Area ISVE system are scheduled to be delivered on January 31, 2002. A 30-ton crane, operated by a certified operator, will be used to move these units into position. The crane safety procedures used during the installation of the Off-Site Area blower shed will be used.

Off-Site Area In-Situ Vapor Extraction System (ISVE)

Clean-air monitoring testing of the ISVE system began January 30, 2002 and is scheduled to be completed during the week of February 4, 2002, depending upon weather. During the testing process, each ISVE well is opened to the atmosphere and fresh air is pulled through the line into the blower shed. This test confirms that the blower unit is functioning as designed and that the yard piping was not damaged during backfill and compaction activities. In addition, atmospheric air is pushed from the blower shed to the

Groundwater Treatment Plant to confirm that the complete piping network is prepared for the start-up of the ISVE unit.

After the thermal oxidizer/scrubber unit is delivered to the site, Ryan Construction will begin assembling and installing the unit and Austgen Electric will install the control system. Representatives from Durr Engineering, the oxidizer/scrubber manufacturer, will be on site the week of February 11, 2002 to perform start-up testing on the unit.

Groundwater Treatment Plant (GWTP)

The GWTP is currently bringing in 35 gpm influent water through the Barrier Wall Extraction System (BWES) and Perimeter Groundwater Extraction System (PGCS). The primary influent source is the Off-Site Area BWES system. The carbon in the Granulated Activated Carbon units (ME-33/34) is scheduled to be changed out on February 4, 2002. Regular carbon changeouts will likely be required until the weather gets warmer and removal efficiencies increase. Cold water bio-mass were added gradually to the activated sludge plant throughout the weeks of January 14, 21, and 28, 2002 to increase the treatment efficiency of the biological treatment processes during the winter months.

After installation of the thermal oxidizer, Ryan Construction will install vapor and condensate conveyance piping which will connect the thermal oxidizer to the GWTP influent header system.

Off-Site Area Temporary Engineered Cover

Koester Environmental Services (KES) is scheduled to be on site during the week of February 4, 2002 to place additional geotextile fabric in a portion of the drainage swale in the Off-Site Area along Colfax Avenue and replace the rip rap in the swale.

Dewatering Progress

MWH has been regularly monitoring water levels inside the Barrier Wall at ACS since April 1998. The number of piezometers regularly monitored was increased beginning in late November 2001 to more accurately track the dewatering progress in the On-Site and Off-Site Areas. Currently, water levels are being collected on a weekly basis from 16 locations inside the Barrier Wall (P-29, P-31, P-32, P-36, P-49, P-106, and P-108 in the On-Site Area, and P-96, P-110, P-112, P-113, P-114, P-116, P-118, SVE-12, and SVE-13 in the Off-Site Area). While over one-half of the design quantity of water (from the Final Remedy) has been removed from the Off-Site Area and nearly one-quarter removed from the On-Site Area, the greatest drawdown has been observed in localized areas near the extraction points. MWH will continue to monitoring the dewatering progress in the Off-Site and On-Site Areas.

The Next Weekly Construction Meeting

The next weekly construction meeting is scheduled for Thursday, February 7, 2002.

TMK/RAA/PJV

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⑥

12/27/01

Jeff E. Peters

Patrick tested curvy 50 linear feet and MWH had Patrick sample at other locations in trenches to walls. K-P area not tested for compaction. Will be performed in spring. HTS will need to remove clay at blower shed connections and compact in spring. North area of OFCA passed over 90% of compaction tests and possibly more depending on the proctor test to be used as standard. MWH to determine.

0850 Weekly construction meeting cancelled. Next meeting 1/3/02. HTS to return to site to demobilize equipment this week

0910 Left site for day

Jeff E. Peters
12/27/01

⑦

1/18/02

Jeff E. Peters

0800 Arrive on site, cloudy, 35°F, wind from South
Personnel Present

* Lee Drasz	MWH
Jerry Clark	Ryan
Don Lunsford	Austgen
Tom Evers	Ryan
Mike Bistley	Austgen
Gary Alexander	Austgen
* Tom Tinius	MWH
* Leigh Peters	BVSPL

Spoke with Tom Tinius regarding site activities.
MEI on site 1/2/02, excavated to conduit with fiber optic cable to be removed at the railroad tracks between AES and OFCA. Austgen was able to remove fiber optic cable, but severed the conduit near the OFCA blower shed. Austgen placed new steel conduit in clay cover from blower shed to remaining conduit near between P En11 and EW12. Austgen to run new cable today. MEI used a manning, Tom Tinius to get manhole cover today. Ryan connecting 15VE piping in blower shed to manifold. MWH performed preliminary air monitoring with PID no elevated readings during connection. Wells uncapped briefly before connection is made.

Jeff E. Peters

⑧

1/10/02

Log E Peters

Oxidizer to be delivered 1/20/02. Ryan will install and make connections. Austgen will perform regrooming near EW20C on behalf of KES. KES supervisor to be on site.

0845 Went to OFCA. Observed Austgen pull rope through conduit for cable. Steel conduit runs from the OFCA blower shed to man ring immediately south of tracks.

0850 Roll 1B Photo 6 facing west showing man ring and conduit, steel conduit to blower shed, plastic conduit runs to GWTP.

0910 Roll 1B Photo 7 facing northwest showing backfilled trench and location of replacement conduit from OFCA blower shed to GWTP.

0915 Roll 1B Photo 8 facing west showing location of replacement conduit outside of 1SVE well field to blower shed.

0920 Observed Ryan install piping in blower shed. Spoke with Jerry Clark regarding piping installation. He reported that MWH was not performing air monitoring during piping installation for the SVE wells to the manifold. He reported that the eastern wells had some fumes and that Ryan would only uncap as it placed the piping on.

Log E Peters

⑨

1/10/02

Log E Peters

1005 Weekly Construction Meeting
Attendees (* on previous list)

T. Klingforth MWH

Chris Daly MWH

P. Vagt MWH (via phone)

Todd Lewis MWH (via phone)

Kevin Adler EPA (via phone)

Sean Brady IDEM (via phone)

H²S

No H²S issues, no reportable incidents

DELA 1SVE

- Ryan Construction working in blower shed and connecting flex piping from SVE walls to the manifold. to be complete by Friday
- Austgen repaired fiber optic line by removing cable and adding steel conduit from blower shed to RR tracks. Reinstalling cable today. MWH out on 1/2/02 installing man ring and excavated to conduit.
- Austgen to install controls. MWH to perform clean air start-up
- Area Survey to be on site 1/17/02 for as built.
- MWH reported that it sampled air with PID when Ryan installed flex tubing. Odor but PID readings 0 ppm

Log E Peters

(10)

1/20/02

J. E. Peters

SWTP

- Carbon changeout 1/7/02. Ran in recirculation until 1/10/02. MWH believes carbon was bad and also needed replacement due to higher flow rates and lower ^{JP} bio tank efficiency.
- Cold water bugs for bio tank to be delivered and installed 1/10/02.
- Pumping from OFCA and ONCA wells
- Thermal oxidizer to be delivered week of 1/28

OFCA COVER

- KES to rework swale 1 when ground is frozen approx. 75 ft of swale, 1/2 day of work

DRC Data being compiled by MWH

Next meeting - 1/24/02

1035 Mtg adjourn.

1100 Spoke with Larry Campbell regarding site activities

1125 Roll 18 Photo 9 facing north showing flex pipe installed in OFCA blower shed.

1140 Spoke with Tom Tinies. He reported that MWH tested air from SVE wells prior to Ryan construction on site. Austgen not 40-hr trained MWH to be working with wells during testing: Austgen only to do control.

1200 Left site for day

J. E. Peters
1/10/02

(11)

1/24/02

J. E. Peters

0810 Arrive on site, 35°F, Cloudy

Personnel Present:

Lee Drosz	MWH
*Tom Tinies	MWH
*Leigh Peters	BVSPC
*Todd Lewis	MWH
*Chris Daly	MWH

0815 Spoke with Tom Tinies. He reported that KES has not been in contact with him regarding swale work. T. Tinies and T. Lewis reported that the oxidizer is scheduled to arrive mid next week.

0930 Spoke with R. Adams of MWH. Expect to start testing OFCA ISVE lines mid to late February. He reported that MWH will likely start with K-P wells since additional dewatering needed in area North of blower shed. ^{this CP} ~~Next~~ years activities include ONCA ISVE system installation and covers. Still evaluating extracting point in ONCA.

1000 Weekly Construction meeting

Personnel Present (* in previous list plus)

Rob Adams	MWH	
Kevin Adler	EPA	(via phone)
Sean Brady	IDEM	(via phone)

J. E. Peters

1/24/02

Health + Safety: no H+S issues or incidents

GWTP: Ramping 25-30 gpm from ONCA wells

10, 17, 18 and OFCA wells 12, 15, 19

PACS cycling on and off

Lower pumping rate due to inefficiency of

sludge tank. MWH looking into insulating - MWH

seeded cold weather bugs. Contaminant influent

concentration is increasing.

ISVE: MWH started blower. Oxidizer to be

delivered week of 1/28/02. System to be started

up on 2/18/02. MWH to report water levels.

Additional dewatering required

OFCA cover: KES to repair northeast suble.

10:20 Meeting Adjourn. Next meeting 1/31/02

10:30 At OFCA blower shed with MWH to

discuss operations at blower shed and

operated blower pulling trash air to

OWTP. MWH decision to test individual

OWTP wells when ~~start~~ oxidizer is operational

per R. Atkins

11:00 Discussed schedule of events. MWH to

open wells and test lines by 2/1. Will

unplug wells, monitor air and discharge to

atmosphere.

11:35 left site for day

Agg's Plan

Agg's Plan

1/30/02

Agg's Plan

0800 Arrive on site, 28° F. Cloudy, snowing 1 inch

or accumulation

Personnel Present

Lie Dress

Chris Daily

Leigh Peters

Tom Tines

MWH

BVBC

MWH

MWH

0900 Tom Tines reported that the oxidizer was

scheduled to be delivered tomorrow instead

of today. Tom Tines reported that KES is

scheduled to return to site this Friday

to repair suble. MWH to begin testing OFCA

blower shed today. MWH reported that

Ryan construction drilled taps for flowmeters

in header on OFCA blower shed. Ryan to

install flow meters this afternoon.

10:15 Went to OFCA blower shed with MWH for

blower testing. Ryan construction does not

have the right fittings for flowmeters. Taped

up holes and will receive fittings tomorrow

10:20 Roll 18 Photo for facing north showing 15VE

connections of header and holes for flowmeters

10:40 MWH operated blower. 15 min to clean air

10:55 MWH closed valves to put load on blower

to run 1 hour. 95 in water vacuum, 23 in water

(14)

1/30/02

~~Jeff Pates~~

- 1055 Roll 18 Photo 11 facing west of C. Daly
reading flowmeter prior to condensate tank
Roll 18 Photo 12 facing north of T. Tinius
closing valve to atmospheric air
Rated load for blower test is 95 inches
of water vacuum, 23 inches off water
pressure.
- 1130 Returned to MMH trailer to work on work
on reports.
- 1210 T. Tinius shut down blower in OFCA
blower shed. Meters still on original
reading. Will finish testing this week
Temperature gage not installed
- 1225 Left site for day

~~Jeff Pates~~
~~1/30/02~~

(15)

The following photos did not develop because of insufficient light.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 18 Photo #1
Date: 12-27-01 Time: 08:35
Photographer: Leigh Peters
Description: Photo facing west showing the
backfill at the north side of the
OFCA blower shed.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 18 Photo #5
Date: 12-27-01 Time: 08:45
Photographer: Leigh Peters
Description: Photo facing east showing the
blower installed in the OFCA
blower shed.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 18 Photo #10
Date: 1-30-02 Time: 10:20
Photographer: Leigh Peters
Description: Photo facing north showing the
OFCA ISVE connections and
holes for the flow meters in the
OFCA blower shed manifold.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 18 Photo #11
Date: 01-30-02 Time: 10:55
Photographer: Leigh Peters
Description: Photo facing west of Chris Daly of
MWH reading the vacuum to the
condensate tank in the OFCA blower
shed during the rated load operation
of the blower.

Site: American Chemical Services, Inc.
Proj. #: 46526
Roll: 18 Photo #12
Date: 01-30-02 Time: 10:55
Photographer: Leigh Peters
Description: Photo facing north of Tom Tinics
of MWH closing the valve for the
atmospheric air to the blower in
the OFCA blower shed.



Site: American Chemical Services, Inc.

Proj. #: 46526

Roll: 18 Photo #2

Date: 12-27-01 Time: 08:35

Photographer: Leigh Peters

Description: Photo facing south showing backfill at the west side of the OFCA blower shed and the clay bridge covering the ISVE piping to the K-P area.

Site: American Chemical Services, Inc.

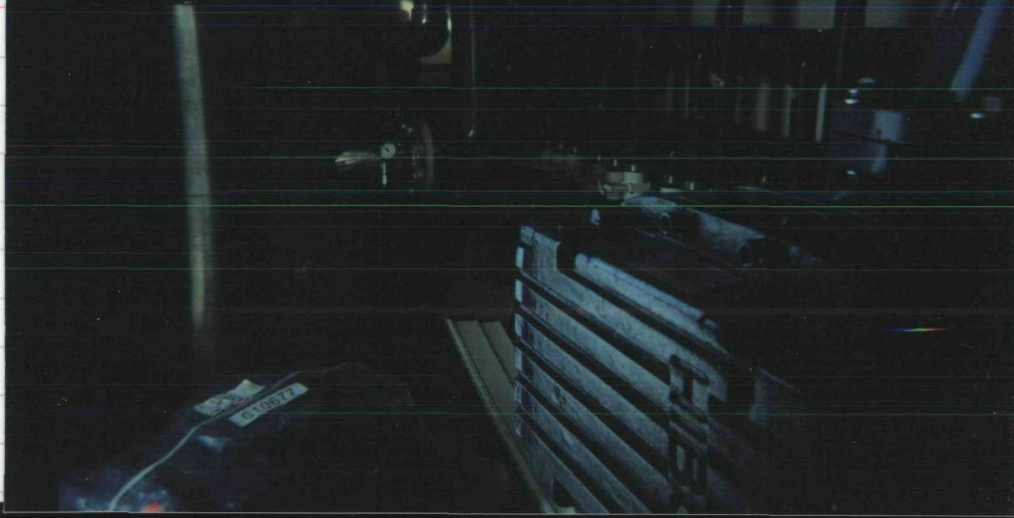
Proj. #: 46526

Roll: 18 Photo #3

Date: 12-27-01 Time: 08:40

Photographer: Leigh Peters

Description: Photo facing northwest showing the backfill at the westernmost air sparge well on the OFCA.



Site: American Chemical Services, Inc.

Proj. #: 46526

Roll: 18 Photo #4

Date: 12-27-01 Time: 08:45

Photographer: Leigh Peters

Description: Photo facing west showing the interior of the OFCA blower shed and the condensate knock-out tank.

Site: American Chemical Services, Inc.

Proj. #: 46526

Roll: 18 Photo #6

Date: 01-10-02 Time: 08:50

Photographer: Leigh Peters

Description: Photo facing west showing the man ring installed by MEI. The steel conduit runs to the blower shed and the plastic conduit runs to the GWTP.



Site: American Chemical Services, Inc.

Proj. #: 46526

Roll: 18 Photo #7

Date: 01-10-02 Time: 09:10

Photographer: Leigh Peters

Description: Photo facing northwest showing the location of the replacement conduit and the backfilled trench that runs from the OFCA blower shed to the GWTP.

Site: American Chemical Services, Inc.

Proj. #: 46526

Roll: 18 Photo #8

Date: 01-10-02 Time: 09:15

Photographer: Leigh Peters

Description: Photo facing west showing the location of the replacement conduit outside of the OFCA ISVE well field to the OFCA blower shed.



Site: American Chemical Services, Inc.

Proj. #: 46526

Roll: 18

Photo #9

Date: 01-10-02

Time: 11:25

Photographer: Leigh Peters

Description: Photo facing north showing the clear flex pipe that connects the OFCA ISVE wells to the manifold in the OFCA blower shed.